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EDITORIAL

The Intelligence of Emotional Intelligence

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Emotional intelligence is a type of social intelligence that involves the ability to monitor one's own and others' emotions, to discriminate among them, and to use the information to guide one's thinking and actions (Salovey & Mayer, 1990). We discuss (a) whether intelligence is an appropriate metaphor for the construct, and (b) the abilities and mechanisms that may underlie emotional intelligence.

Emotional intelligence is a type of social intelligence that involves the ability to monitor one's own and others' emotions, to discriminate among them, and to use the information to guide one's thinking and actions (Salovey & Mayer, 1990). The scope of emotional intelligence includes the verbal and nonverbal appraisal and expression of emotion, the regulation of emotion in the self and others, and the utilization of emotional content in problem solving.

The emotional intelligence framework organizes the existing individual-differences literature on the capacity to process and adapt to affective information. Many intellectual problems contain emotional information that must be processed; this processing may proceed differently than the processing of non-emotional information. Emotional intelligence could have been labeled "emotional competence," but we chose *intelligence* in order to link our framework to a historical literature on intelligence. Our concept overlaps with Gardner's (1983) "[intra]personal intelligence":

The core capacity at work here is *access to one's own feeling life*—one's range of affects or emotions: the capacity instantly to effect discriminations among these feelings and, eventually, to label them, to enmesh them in symbolic codes, to draw upon them as a means of understanding and guiding one's behavior. In its most primitive form, the intrapersonal intelligence amounts to little more than the capac-

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ity to distinguish a feeling of pleasure from one of pain. . . . At its most advanced level, intrapersonal knowledge allows one to detect and to symbolize complex and highly differentiated sets of feelings . . . to attain a deep knowledge of . . . feeling life. (p. 239)

We have been criticized for connecting emotion and intelligence, both in anonymous reviews of our initial articles and in a symposium where we employed the construct (Wegner, 1990; cf. Mayer, 1990). Such criticisms raise important issues. They state: (a) that intelligence is an inappropriate and misleading metaphor, and we are redescribing social intelligence, as well as perhaps falsely casting dispositions such as interpersonal warmth as abilities; (b) that there are no important abilities connected with emotion, or at least no unique abilities; and (c) finally, there is an objection that we might be "rocking the boat" by connecting a heretofore less controversial area (emotion) with a controversial one (intelligence).

These criticisms are addressed in this editorial. In it, we pose the question of whether there really is intelligence to the concept of emotional intelligence. We also refine the concept and place it more fully in the context of the intelligence research tradition.

WHY "EMOTIONAL INTELLIGENCE" MAKES SENSE

Emotional Intelligence is Intelligence, and Partially Discriminable From General Intelligence

What is (an) Intelligence? In recent articles, Scarr (1985, 1989) described a tradition that "lumps all manner of human virtues under the banner of several intelligences" (1989, p. 76), which she viewed as a threat to these other areas, as well as to intelligence research:

There are many human virtues that are not sufficiently rewarded in our society, such as goodness in human relationships, and talents in music, dance, and painting. To call them intelligence does not do justice either to theories of intelligence or to the personality traits and special talents that lie beyond the consensual definition of intelligence. Nor does calling all human virtues intelligence readjust social rewards, the goal toward which I believe such theories are pointed. (Scarr, 1989, p. 78)

Using social competence as an example, Scarr (1989) noted that getting along well with others involves extraversion, self-confidence, low anxiety, and social perceptiveness. Scarr (1989) further noted that, although all of these correlate with intelligence, they are not intelligence. We agree, in part. A line—albeit an imperfect one—can be drawn between general personality and intelligence as follows. Personality traits such as extraversion involve dispositions toward be-

havior; intelligence involves organismic abilities to behave. Although a trait such as extraversion may depend on social skill, or result in it, a trait is a behavioral preference rather than an ability. Knowing what another person feels, in contrast, is a mental ability. Such knowledge may stem from *g*, or be somewhat independent of it. The way in which we have defined emotional intelligence—as involving a series of mental abilities—qualifies it as a form of intelligence.

Emotional Intelligence May Have Better Discriminant Validity From General Intelligence Than Social Intelligence. If emotional intelligence is partially independent of general intelligence, it will be of greater theoretical importance. The skills we posit as a part of emotional intelligence are usually grouped together with social intelligence. Social intelligence was defined initially as “the ability to understand and manage people” (R.L. Thorndike & Stein, 1937, p. 275). Because social intelligence can be applied inward, social intelligence includes also the ability to understand and manage oneself.

The concept of social intelligence has a long history among intelligence researchers (Walker & Foley, 1973). E.L. Thorndike (1920) originally distinguished social from other forms of intelligence, and defined it as “the ability to understand and manage men and women, boys and girls—to act wisely in human relations” (p. 228). In essence, E.L. Thorndike defined social intelligence as the ability to perceive one’s own and others’ internal states, motives, and behaviors, and to act toward them optimally on the basis of that information.

R.L. Thorndike and Stein (1937) examined responses to the George Washington Social Insight Test and other measures of social intelligence. They concluded that “whether there is any unitary trait corresponding to social intelligence remains to be demonstrated” (p. 284), but not that this demonstration would be impossible. They concluded that further investigation, relying on scales with less verbal content, might lead to successful measurement of the construct.

Cronbach (1960) reviewed this earlier work skeptically, concluding that despite “50 years of intermittent investigation . . . social intelligence remains undefined and unmeasured” (p. 319). Most researchers accepted Cronbach’s conclusions that “enough attempts were made . . . to indicate that this line of approach is fruitless” (p. 319; see, e.g., Chlopan, McCain, Carbonell, & Hagen, 1985). The sole basis for his statements and those of others (e.g., Ford & Tisak, 1983; Walker & Foley, 1973), however, was the earlier work by R.L. Thorndike and Stein (1937).

There is at present a resurgence of interest in social intelligence (Cantor & Kihlstrom, 1985; 1987; Cantor, Norem, Niedenthal, Langston, & Brower, 1987; Ford, 1982; Sternberg, Conway, Ketron, & Bernstein, 1981; Sternberg & Smith, 1985). Related concepts such as “constructive thinking” have also emerged (Epstein, 1986; Epstein & Feist, 1988). But the problem of discriminant validity remains. So much of general intelligence operates in the social domain that it is not difficult to understand why there has been difficulty in establishing the dis-

criminant validity of social intelligence (Broom, 1928; Keating, 1978; O'Sullivan, Guilford, & DeMille, 1965; R.L. Thorndike, 1936; R.L. Thorndike & Stein, 1937). One problem was that social intelligence was defined so broadly as to blend it imperceptibly into verbal and visuospatial intelligence. Machiavellianism, charisma, and other more prosaic social strategizing all rely on abstract reasoning that cannot be far from general intelligence. This point can be made with a familiar example from the Wechsler Adult Intelligence Scale (WAIS). The intelligence test item that asks what one should do having found a letter that was addressed and had a stamp on it, is considered a measure of verbal intelligence, and yet, to answer the question requires social knowledge and even morality (Wechsler, 1958). Such an item, however, would not fall into the emotional intelligence domain, because it is not predominantly involved with the processing of emotion. Emotional intelligence, as compared with social intelligence, may therefore be more clearly distinguished from general intelligence as involving the manipulation of emotions and emotional content. As a result, it may have better discriminant validity.

There May Be Unique Mechanisms Underlying Emotional Intelligence

There are several mechanisms that may underlie emotional intelligence: (a) emotionality itself; (b) the facilitation and inhibition of emotional information flow; and (c) specialized neural mechanisms. These are dealt with in turn.

Emotionality Contributes to Specific Abilities. Individuals differ in the frequency and amplitude of their shifts in predominant affect (Eysenck, 1982; Larsen, Diener, & Emmons, 1986). Accordingly, certain individuals have available to them a rich panoply of feeling. In the same way that some individuals are verbally fluent because they can rapidly and effectively generate words (French, 1951; Thurstone, 1938), these people may be emotionally fluent, in that they can rapidly and effectively generate emotions and emotion-related thoughts.

People who experience varying emotions will also experience varying thoughts along with them. People in good moods perceive positive events as more likely, and negative events as less likely to occur; the reverse holds true for people in unpleasant moods (Bower, 1981; Johnson & Tversky, 1983; Mayer & Bremer, 1985; Mayer, Mamborg, & Volanth, 1988; Mayer & Volanth, 1985; Salovey & Birnbaum, 1989). Those individuals with stronger mood swings will experience concomitantly dramatic changes in their likelihood estimates of future events depending upon the valence of those events; such changes may, in consequence, enhance their fluency in generating alternative outcomes; they may therefore generate a larger number of future plans for themselves and thereby be better prepared to take advantage of future opportunities (Mayer, 1986). Thus, mood swings, at least when moderate, may assist such people in breaking set when thinking about the future, and enable them to consider a wider variety of possible outcomes.

Moods also facilitate prioritizing life tasks. Emotions direct our attention to stimuli in need of processing (Easterbrook, 1959; Salovey, 1990). Because moods and emotions sometimes arise when there is a mismatch between personal expectations and environmental realities, moods direct attention to the self, perhaps to clarify the experience and facilitate adaptive responses to it (Salovey & Rodin, 1985). We have recently found that both happy and sad moods are followed by a shift in attention inward: Such a shift would seem to promote cognitive and behavioral activities that potentially maintain pleasant, or relieve unpleasant, states (Salovey, 1990). It is possible that such activities could also lead to a focus on better prioritization of life needs and goals.

Finally, emotional individuals may place emphasis on higher level processes concerning attention to feelings, clarity, and discriminability of feelings, and beliefs about mood-regulatory strategies (Mayer & Gaschke, 1988). Individuals who experience feelings clearly, and who are confident about their abilities to regulate their affect, seem to be able to repair their moods more quickly and effectively following failure and other disturbing experiences (Salovey, Mayer, Goldman, Turvey, & Palfai, 1993).

Emotion Management Influences Information Channels. There exists a class of mental operations, both automatic and voluntary, by which we enhance or diminish our emotional experience. Such management of internal experience may inadvertently amplify or reduce other concomitant information necessary for problem solving. Mostly, we think of emotional management as serving the purpose of limiting experience. This side of management is the traditional one of defense mechanisms. As Anna Freud (1966) put it:

[The ego] defends itself . . . energetically and actively against the affects. . . . Love, longing, jealousy, mortification, pain . . . (pp. 31–32)

Other psychologists have been interested in the way we can expand our experience through acceptance of ourselves or expanding conscious awareness (Rogers, 1961). A most elegant statement in this regard was Huxley's (1954/1990):

Most people, most of the time, know only what comes through the reducing valve and is consecrated as genuinely real. . . . Certain persons, however, seem to be born with a kind of by-pass that circumvents the reducing valve. (p. 24)

We have found that when individuals experience a mood, for example, they experience more than pure feeling. Often particular thoughts—some of them regulatory and controlling the flow of information—accompany the mood reaction (Mayer, Salovey, Gombert-Kaufman, & Blainey, 1991). Examples of covert thoughts that defend or cut off experience include: “don’t think about it,” “I have no reaction,” and “it’s not worth my attention.” Examples of thoughts that may open one to experience include: “find out more,” or “open myself to this feel-

ing." Such internal experiences are predictive of general openness and empathy for feelings. During defensive and restrictive emotion management, people feel *less* empathy toward others. When emotion management is open to experience, people feel *more* empathy toward others (Mayer et al., 1991). Empathy, furthermore, may be a major underlying contributor to emotional intelligence. For example, the ability to recognize consensual emotion in faces, colors, and abstract designs is better among those higher in empathy (Mayer, DiPaolo, & Salovey, 1990). In general, in fact, consistent associations have been found between emotional communication and empathy (Notarius & Levenson, 1979). What we are proposing is that mood regulatory mechanisms, which can be studied in the context of emotional experience, may ultimately turn out to be important in explaining constructs such as empathy and abilities related to it.

Openness may be detectable during intelligence testing as well. Most often, intelligence testing is conducted under sufficiently benign conditions that most individuals can operate within the context without serious emotional interference. When stressful emotional information is being communicated—as often happens in daily life—perhaps only some individuals can remain open to all that is being said. Some evidence for this point of view already exists, albeit in the direction of deficits rather than surfeits of emotional intelligence. Both laboratory research (Hutt, 1947) and clinical studies (Axline, 1965; Baruch, 1952) suggest that creating more emotionally stable testing environments, or employing psychotherapy with the disturbed individual, can yield dramatic increases in tested intelligence quotients. Although these are deficit models, the opposite extreme may occur as well. That is, under conditions of great emotional stress, even "normals" IQ may suffer, whereas there may still be individuals who remain open to information, and consequently have higher IQs in the absence of any other differences in mental ability. Measures for studying relative openness during emotional states have already begun to be designed (Mayer et al., 1991; Mayer, Stevens, Bryan, & Nishikawa, 1991).

There May Be Specialized Ability at Coding and Decoding Emotional Representations. Finally, some sort of integration between affect and thought may occur at a neurological level. The term *alexithymia* (coined from the Greek "no words for feelings") has been introduced to refer to psychiatric patients who are unable to appraise and then verbally express their emotions. People working in the area have speculated on a neurological explanations for alexithymia. These include that it is due to the blocking of impulses from the right to left hemisphere at the corpus callosum or to a disconnection between limbic systems and higher cortical activities (MacLean, 1949; Ten Houten, Hoppe, Bogen, & Walter, 1986). In the same way that the human visual cortex may contribute to imagery ability, interconnections between certain brain locations may contribute to conceptualization of emotional-motivational patterns. Of course these neurological theories are quite speculative given the state of the field at this time.

Although a number of measures of alexithymia have been developed (Taylor, 1984), many were not well developed or reliable. These scales, however limited at present, may form the kernels of true ability scales for emotional coding and decoding. Scales for nonverbal coding and decoding have been more extensively developed (for reviews, see Buck, 1984; Salovey & Mayer, 1990).

Conclusions Regarding Alternative Mechanisms. The previously described processes involving emotional intelligence are different from those describing general intelligence. Explanations of general intelligence have typically included concepts of neural transmission speed or processing breadth. Horn (1989) proposed speed factors of intelligence. Eysenck (1986), has suggested that higher *g* individuals possess neural circuitry that transmits information with less noise or error. Detterman (1982) has suggested that *g* may be a necessary emergent quality of any complex system with interconnected parts. Such explanations seem mostly independent of the ones proposed earlier concerning emotionality, emotion management, and neurological connections. These differences mean that, once again, emotional intelligence has potential discriminant validity from general intelligence.

Connecting Emotional Intelligence to Intelligence Will Rock the Boat

This final criticism of emotional intelligence suggests that it should be somehow separated from allied fields owing to the controversial relations between IQ and other variables, as well as to the implication that intelligence is relatively fixed and difficult to change. We doubt the readers of this journal are very sympathetic to such criticisms, in part because of its simplistic conceptions of intelligence and intelligence research.

It is paradoxical that emotional intelligence should be criticized for aligning itself with a controversial field because part of its purview is itself the processing of such emotionally evocative (threatening) information. We stated at the outset that we could have called our construct something different such as emotional competence. We did not use the term intelligence to create a controversy, but because we really are talking about a mental aptitude—one that assists in intellectual processing. We are not talking about reaching a criterion, as would be implied by a competence conception. Nor are we talking about an ability divorced from intellect, but rather enhanced processing of certain types of information: in short, emotional intelligence.

CONCLUSIONS

We have discussed three criticisms of the concept of emotional intelligence: whether it is intelligence, the mechanisms underlying it, and whether it is best called intelligence. Emotional intelligence is probably related to general intelligence in being an ability; but it may well also have its differences in terms of

mechanisms and manifestations. Underlying mechanisms may include emotionality, emotion management, and neurological substrates. Its manifestations may include greater verbal fluency in emotional domains, as well as greater overall information transmission under emotional threat.

Different types of people will be more or less emotionally intelligent. Emotionally intelligent individuals may be more aware of their own feelings and those of others. They may be more open to positive and negative aspects of internal experience, better able to label them, and when appropriate, communicate them. Such awareness will often lead to the effective regulation of affect within themselves and others, and so contribute to well being. The overall purpose of this admittedly speculative description was to formulate what emotional intelligence might be like so as both to integrate disparate research literatures that might be relevant to one another, and to encourage new research on the subject.

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